AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A system for receiving and processing MPEG data comprising:

a digital tuner for receiving a data channel containing an MPEG coded data stream;

a decoding system including:

a frequency converter module disposed to transform frequency coefficients in the MPEG coded data stream to a spatial domain to obtain spatial domain data associated with the MPEG data,

a subsampling module for subsampling the spatial domain data by a selected factor to generate subsampled spatial domain data, wherein subsampling the spatial domain data includes weighting color parameters of at least first and second spatial samples using at least first and second weighting factors, respectively, and summing the weighted color parameters of the at least first and second spatial samples to generate a color parameter of a subsample that corresponds to the at least first and second spatial samples, and

a motion vector module disposed to receive motion vector and reference image data in the MPEG coded data stream, ~~the decoding system configured~~ and to process a reference frame and motion vectors of the MPEG data to generate predicted frame data;

a ~~first~~ summer for adding the predicted frame data and the subsampled spatial domain data to generate first video images encoded in a reduced volume of video data; and

a frame buffer disposed to buffer frames of the first video images.

2. (Original) The invention as recited in claim 1, wherein the MPEG coded data is capable of being decoded to produce video images in a first video resolution that is greater than a second video resolution, the first video images having the second video resolution, the invention further comprising:

a display device configured to display video in the second video resolution, the display device coupled to the frame buffer so as to display the first video images.

3. (Original) The invention as recited in claim 2, wherein the display device comprises a standard television monitor.

4. (Currently Amended) The invention as recited in claim 2, wherein the display device is a first display device, the invention further comprising:

a second display device configured to display video in the first video resolution; and

wherein the system is further configured to add ~~a second summer for adding~~ the predicted frame data and non-subsampled spatial domain data to generate second video images formatted for display in the first video resolution on the second display device, wherein the second video images are displayed on the second display device in the first video resolution.

5. (Original) The invention as recited in claim 4, wherein the second display device comprises a high definition television.

6. (Original) The invention as recited in claim 4, wherein the first display device and the second display device are components of a picture-in-picture display device, the first display device configured to display the first video images have the second video resolution in a reduced-size window of the picture-in-picture display, the second display device configured to display the second video images in the second video resolution outside of the reduced-size window of the picture-in-picture display.

7. (Currently Amended) The invention as recited in claim 1, further comprising:

a display device configured to display video in the first video resolution; and

wherein the system is further configured to add ~~a second summer for adding~~ the predicted frame data and non-subsampled spatial domain data to generate second video images formatted for display in the first video resolution on the display device, wherein the second video images are displayed on the second display device in the first video resolution.

8. (Original) The invention as recited in claim 7, wherein the display device comprises a high definition television.

9. (Withdrawn) A computer program product for implementing, in a system for processing MPEG data in preparation for displaying video images encoded in the MPEG data, a method for subsampling the MPEG data to reduce the volume of video data processed to selectively display video images based on a reduced volume of video data, the computer program product comprising:

a computer-readable medium carrying computer-executable instructions capable of causing the system to perform the acts of

processing the MPEG data to generate a reconstructed digital video stream capable of producing video images in a first video resolution,

receiving a request for displaying video images having a second video resolution;

subsampling the MPEG data to obtain a reduced volume reconstructed digital video stream corresponding to the second video resolution that is less than the first video resolution, wherein the subsampled MPEG data is subsampled without generating a version of the subsampled data in the first video resolution;

and selectively presenting either or both of the first and second reconstructed digital video streams.

10. (Withdrawn) The invention of claim 9 wherein the act of subsampling comprises:

processing one or more motion vectors in order to produce coordinates for fetching prediction data from a previously decoded and subsampled reference frame;

processing the reference frame and the one or more motion vectors of the MPEG data using a frame prediction module to generate predicted subsampled frame data;

processing frequency coefficients of the MPEG data using an inverse discrete cosine transformer (IDCT) to generate IDCT output data;

decimating the IDCT output data by a selected factor to generate decimated IDCT output data; and

summing the subsampled predicted frame data and the decimated IDCT output data to generate video images encoded in a reduced volume of video data.

11. (Withdrawn) The invention as recited in claim 10, wherein the act of decimating the IDCT output by a selected factor comprises the act of decimating the IDCT output by a first factor in a first direction and a second factor in a second perpendicular direction, such that the IDCT output is decimated by the selected factor.

12. (Withdrawn) The invention as in claim 10, further comprising the act of identifying the selected factor, the selected factor being identified to reduce the volume of MPEG data that is to be processed to display the video images and to retain enough video data to display the video images at the first video resolution.

13. (Withdrawn) The invention as in claim 10, wherein the MPEG data, prior to the act of decimating, is formatted for display on a display device with the first video resolution, the computer-executable instructions, when executed at the system, further causing the system to perform the act of displaying the generated video images on a display device having the second video resolution.

14. (Withdrawn) The computer program product as recited in claim 13, wherein:
the display device having the first video resolution is a high definition television; and
the display device having the second video resolution is a standard television.

15. (Withdrawn) The computer program product as recited in claim 10, wherein the computer-executable instructions, when executed at the system, further cause the system to perform the act of displaying the video images in a window in a picture-in-picture display, the window having the second video resolution.

16. (Withdrawn) A system for receiving and processing multiple streams of MPEG data comprising:

a first digital tuner for tuning a first data channel containing a first MPEG data stream;

a second digital tuner for tuning a first data channel containing a second MPEG data stream;

an MPEG decoding module receiving the first MPEG data stream and producing a first reconstructed video output signal, the MPEG decoding module further receiving the second MPEG data stream and producing a second reconstructed video output signal with reduced data, the second reconstructed video output signal being derived from reduced frequency coefficients and predicted frame data; and

a display coupled with the MPEG decoding module for rendering a video image based on either the first reconstructed video output, the second reconstructed video output, or a combination of the first and second reconstructed video output signals.

17. (Withdrawn) The invention as in claim 16, wherein the MPEG decoding module includes:

a frame prediction module disposed to receive the MPEG data of at least the second MPEG data stream and disposed to process a reference frame and motion vectors of the MPEG data to generate predicted frame data;

a frequency processing module disposed to transform frequency coefficients of the MPEG data to a spatial domain to obtain spatial domain data associated with the MPEG data, and subsampling the spatial domain data by a selected factor to generate subsampled spatial domain data;

a summer for adding the predicted frame data and the subsampled time domain data to generate video images encoded in a reduced volume of video data; and

a frame buffer disposed to buffer frames of the video images.

18. (Withdrawn) The invention as in claim 16, wherein the display comprises a picture-in-picture display coupled to the frame buffer so as to display the second reconstructed video output in a reduced-size window of the picture-in-picture display, and so as to display the first reconstructed video output in the remainder of the picture-in-picture display.

19. (Withdrawn) The invention as in claim 16, wherein the display comprises a high definition television.

20. (Withdrawn) The invention as in claim 19, wherein the high definition television is capable of displaying the first reconstructed video output.

21. (Withdrawn) The invention as in claim 16, wherein the display comprises a standard television.

22. (Withdrawn) The invention as in claim 21, wherein the standard television is capable of displaying the second reconstructed video output.